

SEQUENCE LISTING

Sub C1

(1) GENERAL INFORMATION:

(i) APPLICANT: IMMER, Hansueli
FORSSMANN, Wolf-Georg
ADERMANN, Knut
KLESSEN, Christian

(ii) TITLE OF INVENTION: PROCESS AND INTERMEDIATE PRODUCTS FOR
PREPARING CARDIODILATIN FRAGMENTS AND HIGHLY PURIFIED CARDIODILATIN
FRAGMENTS

(iii) NUMBER OF SEQUENCES: 11

(iv) CORRESPONDENCE ADDRESS:

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B1

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 09/027,777
(B) FILING DATE: 23-FEB-1998
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

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(B) FILING DATE: 02-JUN-1994

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(A) APPLICATION NUMBER: DE 195 13 784.1
(B) FILING DATE: 10-APR-1995

(viii) ATTORNEY/AGENT INFORMATION:

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(ix) TELECOMMUNICATION INFORMATION:

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(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Cys	Phe	Gly	Gly	Arg	Met	Asp	Arg	Ile	Gly	Ala	Gln	Ser	Gly	Leu	Gly
1				5					10					15	

Cys

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Leu	Arg	Ala	Leu	Leu	Thr	Ala	Pro	Arg	Ser	Leu	Arg	Arg	Ser	Ser
1				5					10					15

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Asn Ser Phe Arg Tyr
1 5

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
(B) LOCATION: 1
(D) OTHER INFORMATION: /note= "Xaa is an amino acid chain
having chain length 0 - 15 amino acids."

(ix) FEATURE:

- (A) NAME/KEY: Peptide
(B) LOCATION: 17
(D) OTHER INFORMATION: /note= "Xaa is an amino acid chain
of 0 - 5 amino acids."

(ix) FEATURE:

- (A) NAME/KEY: Cross-links
(B) LOCATION: 2..18

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Xaa Cys Phe Gly Gly Arg Met Asp Arg Ile Gly Ala Gln Ser Gly Leu
1 5 10 15

Gly Cys Xaa

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Cross-links
(B) LOCATION: 11..27

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Thr Ala Pro Arg Ser Leu Arg Arg Ser Ser Cys Phe Gly Gly Arg Met
1 5 10 15

Asp Arg Ile Gly Ala Gln Ser Gly Leu Gly Cys Asn Ser Phe Arg Tyr
20 25 30

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
(B) LOCATION: 1
(D) OTHER INFORMATION: /product= "Modified by a Boc protecting
a tBu protecting group"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
(B) LOCATION: 4
(D) OTHER INFORMATION: /note= "Modified by a tBu protecting group and a Pbf protecting group"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
(B) LOCATION: 7

group" (D) OTHER INFORMATION: /note= "Modified by a Pbf protecting

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 8

group" (D) OTHER INFORMATION: /note= "Modified by a Pbf protecting

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 9

group" (D) OTHER INFORMATION: /note= "Modified by a tBu protecting

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 10

group" (D) OTHER INFORMATION: /note= "Modified by a tBu protecting

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 11

group" (D) OTHER INFORMATION: /note= "Modified by a Acn protecting

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Thr Ala Pro Arg Ser Leu Arg Arg Ser Ser Cys Phe Gly Gly
1 5 10

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 1

(D) Note INFORMATION: /product= "Modified by a Fmoc protecting group and a Pbf protecting group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 3

(D) Note INFORMATION: /product= "Modified by a OtBu protecting group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 4

(D) Note INFORMATION: /product= "Modified by a Pbf protecting group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 8

(D) Note INFORMATION: /product= "Modified by a Trt protecting group"

B₁
(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 9

(D) Note INFORMATION: /product= "Modified by a tBu protecting group"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Arg Met Asp Arg Ile Gly Ala Gln Ser Gly Leu Gly
1 5 10

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 1

(D) Note INFORMATION: /note= "Xaa is an Fmoc protecting group or H"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2
(D) Note INFORMATION: /product= "Modified by a Trt protecting group"

(ix) FEATURE:
(A) NAME/KEY: Modified-site
(B) LOCATION: 3
(D) Note INFORMATION: /product= "Modified by a Trt protecting group"

(ix) FEATURE:
(A) NAME/KEY: Modified-site
(B) LOCATION: 4
(D) Note INFORMATION: /product= "Modified by a tBu protecting group"

(ix) FEATURE:
(A) NAME/KEY: Modified-site
(B) LOCATION: 6
(D) Note INFORMATION: /product= "Modified by a Pbf protecting group"

(ix) FEATURE:
(A) NAME/KEY: Modified-site
(B) LOCATION: 7
(D) Note INFORMATION: /product= "Modified by a tBu protecting group"

(ix) FEATURE:
(A) NAME/KEY: Modified-site
(B) LOCATION: 8
(D) Note INFORMATION: /note= "Xaa is O-OH or an O-OtBu protecting group"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Xaa Cys Asn Ser Phe Arg Tyr Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 1
 (D) Note INFORMATION: /note= "Xaa is H or an Fmoc protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 2
 (D) Note INFORMATION: /product= "Modified by a Pbf protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 4
 (D) Note INFORMATION: /product= "Modified by a OtBu protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 5
 (D) Note INFORMATION: /product= "Modified by a Pbf protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 9
 (D) Note INFORMATION: /product= "Modified by a Trt protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 10
 (D) Note INFORMATION: /product= "Modified by a tBu protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 14
 (D) Note INFORMATION: /product= "Modified by a Trt protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 15
 (D) Note INFORMATION: /product= "Modified by a Trt protecting
group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 16

(D) Note INFORMATION: /product= "Modified by a tBu protecting group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 18

(D) Note INFORMATION: /product= "Modified by a Pbf protecting group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 19

(D) Note INFORMATION: /product= "Modified by a tBu protecting group and an OtBu protecting group"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Xaa	Arg	Met	Asp	Arg	Ile	Gly	Ala	Gln	Ser	Gly	Leu	Gly	Cys	Asn	Ser
1				5					10					15	

Phe Arg Tyr

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 1

(D) Note INFORMATION: /product= "Modified by a Boc protecting group and a tBu protecting group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 4

(D) Note INFORMATION: /product= "Modified by a Pbf protecting group"

group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 5

(D) Note INFORMATION: /product= "Modified by a tBu protecting

group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 7

(D) Note INFORMATION: /product= "Modified by a Pbf protecting

group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 8

(D) Note INFORMATION: /product= "Modified by a Pbf protecting

group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 9

(D) Note INFORMATION: /product= "Modified by a Bu protecting

group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 10

(D) Note INFORMATION: /product= "Modified by a tBu protecting

group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 11

(D) Note INFORMATION: /product= "Modified by a Acn protecting

group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 15

(D) Note INFORMATION: /product= "Modified by a Pbf protecting

group"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 17

(D) Note INFORMATION: /product= "Modified by a OtBu protecting

group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 18
 (D) Note INFORMATION: /product= "Modified by a Pbf protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 22
 (D) Note INFORMATION: /product= "Modified by a Trt protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 23
 (D) Note INFORMATION: /product= "Modified by a tBu protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 27
 (D) Note INFORMATION: /product= "Modified by a Trt protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 28
 (D) Note INFORMATION: /product= "Modified by a Trt protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 29
 (D) Note INFORMATION: /product= "Modified by a tBu protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 31
 (D) Note INFORMATION: /product= "Modified by a Pbf protecting
group"

(ix) FEATURE:
 (A) NAME/KEY: Modified-site
 (B) LOCATION: 32
 (D) Note INFORMATION: /product= "Modified by a tBu protecting
group and an OtBu protecting group"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Thr Ala Pro Arg Ser Leu Arg Arg Ser Ser Cys Phe Gly Gly Arg Met
1 5 10 15

Asp Arg Ile Gly Ala Gln Ser Gly Leu Gly Cys Asn Ser Phe Arg Tyr
20 25 30

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS:
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
(B) LOCATION: 11
(D) Note INFORMATION: /product= "Modified by a Acn protecting group"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Thr Ala Pro Arg Ser Leu Arg Arg Ser Ser Cys Phe Gly Gly Arg Met
1 5 10 15

Asp Arg Ile Gly Ala Gln Ser Gly Leu Gly Cys Asn Ser Phe Arg Thr
20 25 30